

AP20 Rec'd PCT/PTO 16 JUN 2006

CLAIMS

1. A method of selecting an access network from among one or more access networks, belonging to one or several different operators, where each said access network is capable of providing service to a mobile communication station, **characterized by:**

measuring (S1), for at least two access networks, an end-to-end quality through the whole communication path including both radio links and wired links between the terminal and a destination node, and

selecting (S2) at least one access based on said measured end-to-end quality.

2. The method according to claim 1, **characterized in that** said measuring (S1) step is performed at the terminal.

3. The method according to claim 1, **characterized in that** said measuring (S1) step is performed at an intermediate node.

4. The method according to any of claims 1- 3, **characterized by** said measuring step (S1) comprising transmitting at least one acknowledgeable measuring packet through each access between the terminal and the destination node.

5. The method according to any of claims 1-4, **characterized by** measuring (S1) said end-to-end quality as a function of at least a delay for each access.

6. The method according to any of claims 1-5, **characterized by** measuring (S1) said end-to-end quality as a function of at least bandwidth for each access.

7. The method according to claim 4, **characterized by** said measuring (S1) step comprising transmitting multiple acknowledgeable measuring packets through each access between the terminal and the destination node.

8. The method according to claim 4, **characterized by** transmitting acknowledgeable measuring packets with different sizes.

9. The method according to claim 7, **characterized by** measuring (S1) said end-to-end quality as a function of a packet error rate for each access.

10. The method according to claim 4, **characterized in that** said acknowledgeable measuring packet is a ping packet.

11. The method according to claim 4, **characterized in that** said acknowledgeable measuring packet is a payload packet.

12. The method according to claim 1, **characterized by** the further steps of:
 selecting more than one access, and
 transmitting fractions of the data to be transmitted on each selected access, based on the measured end-to-end quality for each access.

13. The method according to claim 8, **characterized by** transmitting fractions of the data basically according to:

$$L_n = \frac{1}{D_n \cdot \sum_{i=1}^N \frac{1}{D_i}} \cdot L_{tot}$$

where L_{tot} is the total load, L_n is the load or utilization for access n , D_n is the normalized round trip time in s/kbit for access n , and N is the number of accesses selected.

14. A system enabling selection of an access network from among one or more access networks belonging to one or several different operators, where each said access is capable of providing service to a mobile communication station, **characterized by**:

means (12) for measuring, for each access network (20), an end-to-end quality through the whole communication path including both radio links and wired links between the terminal (10) and a destination node (30), and

means (13) for selecting at least one access (20) based on said measured end-to-end quality.

15. The system according to claim 14, **characterized in that** said measuring means (12) are located in the terminal.
16. The system according to claim 14, **characterized in that** said measuring means (12) are located in an intermediate node,
17. The system according to claim 16, **characterized in that** said measuring means are further adapted to transmit the measurements results to the terminal.
18. The system according to claim 16, **characterized in that** said selecting means (13) are located in one of the intermediate node, the terminal or another node.
19. The system according to claim 14, **characterized in that** said measuring means (12) are configured to transmit at least one acknowledgeable measuring packet through each access between the terminal and the destination node.
20. The system according to any of claims 14-19, **characterized in that** said measuring means (12) are configured to measure said end-to-end quality as a function of at least delay and/or bandwidth for each access.
21. The system according to claim 14, **characterized in that** said measuring means (12) are configured to transmit multiple acknowledgeable measuring packets through each access between the terminal and the destination node.
22. The system according to claim 21, **characterized in that** said measuring means (12) are configured to measure said end-to-end quality as a function of a packet error rate for each access.
23. The system according to claim 14, **characterized in that** said selecting means (13) are configured to select more than one address, and to transmit fractions of data to be

transmitted on each selected access, based on the measured end-to-end quality for each access.

24. A node in a multi-access telecommunication system, **characterized by:**

means (12) for measuring, for each access network (20), an end-to-end quality through the whole communication path including both radio link and wired links between a terminal (10) and a destination node (30), and

means (13) for selecting at least one access (20) for the terminal (10) based on said measured end-to-end quality.

25. The node according to claim 24, **wherein** said selecting means (13) are further adapted to report said selected at least one access to the terminal.

26. A mobile communication terminal (10) capable of using one or more access networks belonging to one or several different operators in a multi-access system, **characterized by:**

means (12) for measuring, for each access network (20), an end-to-end quality through the whole communication path including both radio link and wired links between the terminal (10) and a destination node (30), and

means (13) for selecting at least one access (20) based on said measured end-to-end quality.